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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,027	06/23/2003	Samuel F. Pellicori	333768-100004	7639

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JONES DAY  
555 WEST FIFTH STREET, SUITE 4600  
LOS ANGELES, CA 90013-1025

EXAMINER  
LAVARIAS, ARNEL C

ART UNIT 2872	PAPER NUMBER
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DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/602,027

Applicant(s)

PELLICORI ET AL.

Examiner

Arnel C. Lavarias

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 23-40 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 23-40 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 6/23/03  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

1. The cancellation of Claims 1-22 in the submission dated 6/23/03 is acknowledged and accepted.

### *Drawings*

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "36" has been used to designate both a dielectric layer (Figure 16) and a third metal layer (Figure 21). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Specification*

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
4. The disclosure is objected to because of the following informalities:  
Paragraph 0034, line 1- 'though' should read 'through'  
Paragraph 0061, line 5- '11a' should read '11b'  
Paragraph 0066, line 11- 'boarder' should read 'border'  
Paragraph 0070, line 1- 'effect' should read 'affect'

Paragraph 0093, line 8- '23' should read '21'

Paragraph 0094, line 7- '19' should read '31'

Paragraph 0133, line 4- 'is exceeds a' should read 'exceeds'

Table 7, column 2, row 7- 'ITO' should read 'Cr'

Table 8, column 2, row 7- 'ITO' should read 'Cr'

Paragraph 0152, line 7- insert 'is' after 'This'

Paragraph 0179, line 2- insert 'of' after 'method'.

Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. (U.S. Patent No. 5731898), of record, in view of Crawford et al. (U.S. Patent No. 4430366) and Lynch et al. (U.S. Patent No. 5721007).

Orzi et al. discloses a method of manufacturing an optical filter arrangement (See entire document, particularly Figures 3A-3F) on a roll of flexible film substrate that is at least two feet wide comprising depositing a multilayer thin film base stack on a surface of the substrate and over a substantial majority of its length (See 46, 52A in Figure 3C; col. 5, lines 42-60); printing a mask layer over a portion of the base stack, the mask layer

comprising a removable ink (See 57 in Figure 3D; col. 5, lines 42-60); depositing at least one additional thin film layer over the base stack and mask layer (See 56A in Figure 3E; col. 5, lines 42-60); and removing the mask layer (See Figure 3F; col. 5, lines 42-60). Orzi et al. further discloses the additional thin film layer comprising a dielectric thin film layer (See 56A, 56B in Figure 3F; col. 5, lines 42-60); and the base stack comprising metal film, such as chromium (See 52A in Figure 3F; col. 5, lines 42-60). Orzi et al. lacks using a web coater for depositing the multilayer thin films or using a wide format printer to print a mask layer. However, the use of web or roll coaters for depositing thin film layers is well known in the art of thin film technology. Further, the use of printers, such as ink jet printers, to deposit masking layers onto a film is also known in the art of thin film technology. For example, Crawford et al. teaches a method and apparatus for depositing thin films (See Abstract; Figure), wherein a roll or web coater (See Figure) is utilized to deposit various thin film materials on a substrate (See 26, 32 in Figure) in the form of a roll (See 24, 34 in Figure). Further, Lynch et al. teaches a process for depositing ink or resist-based masking patterns onto a substrate material (See Abstract; Figures 1-4), wherein the ink or resist-based masking layers (See for example 3 in Figures 1-4) are deposited onto the substrate (See for example 2 in Figures 1-4) or existing film layer (See for example 1 in Figures 1-4) using an ink jet printer or rotating screen printer adapted for mask deposition (See col. 5, line 52-col. 7, line 64). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use a web coater for depositing the multilayer thin films or use a wide format printer to print a mask layer, as taught by Crawford et al. and Lynch et al.,

in the method of manufacturing an optical filter arrangement of Orzi et al., for the purpose of 1) providing continuous, controlled, automated deposition of films over long lengths of substrates in a rapid fashion, and 2) taking advantage of the speed and film deposition uniformity provided by printers, while reducing the amount of ink/masking material required.

7. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al.

Orzi et al. in view of Crawford et al. and Lynch et al. discloses the invention as set forth above in Claim 23, except for the step of connecting the printer to a microprocessor and utilizing the microprocessor to print the mask layer in the form of an image file stored within the microprocessor. However, Lynch et al. further teaches the use of a electronic computer, which has a microprocessor, that is connected to the printer to control and send image data to the printer (See col. 5, lines 51-59; col. 6, line 12-col. 7, line 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al., further include the step of connecting the printer to a microprocessor and utilizing the microprocessor to print the mask layer in the form of an image file stored within the microprocessor, as additionally taught by Lynch et al., for the purpose of automating the printing process while providing correction to feedback signals provided by the computer.

8. Claims 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al.

Orzi et al. in view of Crawford et al. and Lynch et al. discloses the invention as set forth above in Claim 23, except for the mask layer being removed using a solvent, such as water or an organic solvent like isopropyl alcohol. However, Lynch et al. further teaches that the removal of the mask pattern (See 3 in Figures 1-4) comprising an ink or resist may be removed after processing by use of a base or solvent (See col. 8, line 11- col. 9, line 20). Further, the use of solvents, such as water or organic solvents like isopropyl alcohol are known in the art for removing ink or resist. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the mask layer be removed using a solvent, such as water or an organic solvent like isopropyl alcohol, as additionally taught by Lynch et al., in the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al., for the purpose of cleanly and quickly removing unwanted resist and ink material from the surface of the film without altering or affect the underlying film surface.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al. as applied to Claim 23 above, and further in view of Oyama et al. (U.S. Patent No. 5298312), of record.

Orzi et al. in view of Crawford et al. and Lynch et al. discloses the invention as set forth above in Claim 23, except for the base stack comprising a first metallic thin film deposited on the substrate, a first dielectric thin film layer deposited on the first metallic layer, and a second metallic thin film deposited on the first dielectric layer. However, Oyama et al. teaches that in addition to a first metal layer deposited on a substrate,

additional layers of dielectric, such as indium tin oxide (See col. 4, lines 17-31), and metal, such as chromium (See col. 7, line 65-col. 8, line 9), of varying thickness are deposited to adjust the reflectance of the dielectric thin film from both the substrate and the coating side (See Figures 7 and 11; Table 3; col. 4, lines 17-31; col. 7, line 65-col. 8, line 9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate additional dielectric and metal layers in the base stack, as taught by Oyama et al., in the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al. One would have been motivated to do this to adjust the transmittance and reflectance of the imaging optical film based on the intended application.

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10. ~~Claims 32, 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al. as applied to Claim 23 above, and further in view of Phillips et al. (U.S. Patent No. 3607522).~~

Orzi et al. in view of Crawford et al. and Lynch et al. discloses the invention as set forth above in Claim 23, except for the additional steps of storing the substrate for an indeterminate period of time and removing a section of the substrate as needed. However, such steps are known in the art of thin film deposition, particularly where multiple deposition steps via multiple passes through one or more web or roll coating devices are required. For example, Phillips et al. teaches a web or roll coating device for depositing a material on a substrate (See Abstract; Figures 1-2), wherein a previously stored roll of substrate (See for example 41 in Figure 2) is passed through a roll or web coater (See Figure 2) for thin film deposition, and the coated substrate is taken up and

stored (See 65 in Figure 2) until it is required in a further processing step (See 9 in Figure 1; col. 2, line 55-col. 4, line 60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al., further include the steps of storing the substrate for an indeterminate period of time and removing a section of the substrate as needed, as taught by Phillips et al., for the purpose of providing the ability to inspect the coated substrate prior to further processing.

11. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. as applied to Claims 23 and 32 above.
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Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. discloses the invention as set forth above in Claims 23 and 32, except for the step of connecting the printer to a microprocessor and utilizing the microprocessor to print the mask layer in the form of an image file stored within the microprocessor. However, Lynch et al. further teaches the use of a electronic computer, which has a microprocessor, that is connected to the printer to control and send image data to the printer (See col. 5, lines 51-59; col. 6, line 12-col. 7, line 12). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al., further include the step of connecting the printer to a microprocessor and utilizing the microprocessor to print the mask layer in

the form of an image file stored within the microprocessor, as additionally taught by Lynch et al., for the purpose of automating the printing process while providing correction to feedback signals provided by the computer.

12. Claims 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. as applied to Claims 23 and 32 above.

Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. discloses the invention as set forth above in Claims 23 and 32, except for the mask layer being removed using a solvent, such as water or an organic solvent like isopropyl alcohol. However, Lynch et al. further teaches that the removal of the mask pattern (See 3 in Figures 1-4) comprising an ink or resist may be removed after processing by use of a base or solvent (See col. 8, line 11-col. 9, line 20). Further, the use of solvents, such as water or organic solvents like isopropyl alcohol are known in the art for removing ink or resist. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the mask layer be removed using a solvent, such as water or an organic solvent like isopropyl alcohol, as additionally taught by Lynch et al., in the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al., for the purpose of cleanly and quickly removing unwanted resist and ink material from the surface of the film without altering or affect the underlying film surface.

13. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. as applied to claims 23 and 32 above, and further in view of Oyama et al.


Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. discloses the invention as set forth above in Claims 23 and 32, except for the base stack comprising a first metallic thin film deposited on the substrate, a first dielectric thin film layer deposited on the first metallic layer, and a second metallic thin film deposited on the first dielectric layer. However, Oyama et al. teaches that in addition to a first metal layer deposited on a substrate, additional layers of dielectric, such as indium tin oxide (See col. 4, lines 17-31), and metal, such as chromium (See col. Col. 7, line 65-col. 8, line 9), of varying thickness are deposited to adjust the reflectance of the dielectric thin film from both the substrate and the coating side (See Figures 7 and 11; Table 3; col. 4, lines 17-31; col. 7, line 65-col. 8, line 9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate additional dielectric and metal layers in the base stack, as taught by Oyama et al., in the method of manufacturing an optical filter arrangement of Orzi et al. in view of Crawford et al. and Lynch et al. and further in view of Phillips et al. One would have been motivated to do this to adjust the transmittance and reflectance of the imaging optical film based on the intended application.

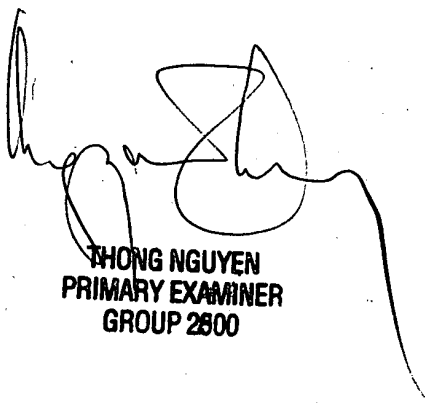
**Conclusion**

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Arnel C. Lavarias  
5/12/04

  
THONG NGUYEN  
PRIMARY EXAMINER  
GROUP 2800